

Pennsylvania.—Dyberry, trace.
Vermont.—Stowe, 5; Strafford, 3; Post Mills, 1.
Washington Territory.—Spokane Falls, 0.3.
Wisconsin.—Embarras, 14; Madison, 13.5; Milwaukee, 6; Neillsville, 1 to 5; La Crosse, 0.5.

HAIL.

Fall Brook, San Diego county, California: a heavy fall of hail occurred at 8 a. m. of the 18th, lasting several minutes. The stones, which were the size of peas, fell in sufficient quantity to whiten the ground and remained unmelted for half an hour. Hail showers also occurred at 8.30 and 11.30 a. m. and 2.30 p. m. of the same day.

Birmingham, Jefferson county, Alabama: a violent hail storm occurred at 3.30 p. m. of the 29th, lasting five minutes. The stones, which were of clear ice, were generally spherical in shape and of the size of chestnuts. Considerable damage was done to gardens, skylights, etc.

SLEET.

Sleet occurred in the various states and territories during the month, as follows:

Alabama.—Montgomery, 4th; Greensborough, 31st.
Connecticut.—Bethel, 19th; New Haven, 21st.
Dakota.—Fort Buford, 12th, 15th.
Georgia.—Quitman, 13th.
Idaho.—Boisé City, 16th, 26th.
Indiana.—Indianapolis, 5th, 13th; Vevay, 21st.
Iowa.—Independence, 11th; Davenport, 11th, 12th, 20th; Cedar Rapids, 14th; Oskaloosa, 28th.
Kansas.—Ottawa, 1st; Independence, 2d; El Dorado, 2d, 24th, 25th; Fort Riley, 4th; Yates Centre, 20th; Ninnescah, 28th.
Maine.—Portland, 12th, 16th, 20th, 21st, 29th, 30th; Eastport, 15th, 16th, 21st, 22d.
Massachusetts.—Princeton, 21st.
Michigan.—Grand Haven, 15th, 28th; Escanaba, 17th, 20th, 21st; Marquette, 19th.
Minnesota.—Saint Paul, 19th.
Missouri.—Lamar, 25th, 29th.
Nebraska.—Brownville, 4th; Valentine, 18th.
New Jersey.—Dover, 12th, 22d, 23d, 27th.
New York.—Le Roy, 12th; Setauket, 27th; Fort Columbus, 28th.
Ohio.—Cleveland, 12th, 21st; Columbus, 21st.
Pennsylvania.—Easton, 18th to 21st.
South Carolina.—Spartanburg, 10th.
Tennessee.—Memphis, 4th.
Texas.—Abilene and El Paso, 29th.
Vermont.—Poultney, 8th.
Virginia.—Fort Myer, 12th.
Washington Territory.—Olympia, 7th, 15th; Tatoosh Island, 15th; Walla Walla, 19th, 24th, 31st; Pysht, 24th, 25th; Fort Spokane, 31st.
Wisconsin.—La Crosse and Madison, 20th.

TEMPERATURE OF WATER.

Observations were interrupted by ice throughout the month at the following stations: Duluth, Minnesota; Escanaba, Marquette, Mackinaw City, and Alpena, Michigan; Milwaukee, Wisconsin. Observations were also interrupted by ice at Chicago, Illinois, from the 1st to 11th; Detroit, Michigan, 1st to 10th, 13th, 14th, 15th; Toledo, Ohio, 1st to 14th; Sandusky, Ohio, 1st to 20th; Cleveland, Ohio, 1st to 14th, 22d, 23d, 27th, 28th; Buffalo, New York, 1st to 23d. Observations were suspended during the month at Indianola, Texas, and at San Francisco, California, from the 22d to 31st.

The following table shows the highest and lowest temperatures of water observed at the several stations; the monthly ranges of water temperature; the average depth at which the observations were made; and the mean temperature of the air:

Temperature of water for March, 1886.

Station.	Temperature at bottom.		Range.	Average depth, feet and tenths.	Mean temperature of the air at station.
	Max.	Min.			
Atlantic City, New Jersey	43.0	33.9	9.1	8.9	34.1
Alpena, Michigan*	61.0	47.9	13.1	10.1	54.2
Augusta, Georgia	45.5	33.2	12.3	10.0	41.6
Baltimore, Maryland	38.1	28.1	10.0	8.3	34.2
Block Island, Rhode Island	40.1	29.3	10.8	20.0	33.7
Boston, Massachusetts	39.6	33.5	6.1	10.0	31.0
Buffalo, New York*	68.9	53.8	15.1	8.6	59.2
Cedar Keys, Florida	59.0	48.7	10.3	38.2	53.9
Charleston, South Carolina	39.2	33.6	5.6	8.2	36.1
Chicago, Illinois*	50.4	31.4	19.0	3.3	41.4
Chincoteague, Virginia	39.0	33.3	5.7	14.0	34.9
Cleveland, Ohio*	35.4	33.0	2.4	22.6	35.6
Detroit, Michigan*	36.0	31.5	4.5	16.9	28.1
Duluth, Minnesota*	68.0	56.2	11.8	12.8	59.0
Eastport, Maine	37.4	31.1	6.3	19.0	30.4
Escanaba, Michigan*	69.7	55.1	14.6	18.0	59.9
Galveston, Texas	58.0	43.0	15.0	8.3	49.3
Grand Haven, Michigan	64.0	51.2	12.8	17.0	56.7
Indianola, Texas†	39.0	30.7	8.3	16.2	34.3
Jacksonville, Florida	37.9	32.7	5.2	12.7	35.1
Key West, Florida	40.0	31.0	9.0	18.0	36.9
Mackinaw City, Michigan*	51.3	38.1	13.2	15.8	46.3
Macon, Fort, North Carolina	64.4	55.1	9.3	17.5	57.3
Marquette, Michigan*	37.8	30.5	7.3	16.1	29.2
Milwaukee, Wisconsin*	49.8	43.0	6.8	52.6	44.8
Mobile, Alabama	41.4	37.9	3.5	10.0	34.9
New Haven, Connecticut	38.9	28.1	10.8	9.3	36.8
New London, Connecticut	55.0	53.9	1.1	39.2	52.6
New York City	63.1	47.1	16.0	9.7	57.2
Norfolk, Virginia	62.9	42.0	20.9	10.8	50.4
Pennacola, Florida	42.3	32.9	9.4	13.0	34.0
Portland, Maine	58.8	45.9	12.9	12.0	52.5
Portland, Oregon					
Sandusky, Ohio*					
Sandy Hook, New Jersey					
San Francisco, California†					
Savannah, Georgia					
Smithville, North Carolina					
Toledo, Ohio*					
Wilmington, North Carolina					

* Observations interrupted by ice; see text. † Observations temporarily suspended.

WINDS.

The most frequent directions of the wind during March, 1886, are shown on chart ii by the arrows flying with the wind; they are also given in the tables of miscellaneous meteorological data. In the upper Mississippi and Missouri valleys, and on the Atlantic coast north of the thirty-fifth parallel the prevailing winds were northwesterly; in the lower lake region, Ohio Valley, south Atlantic and east Gulf states they were from southwest to northwest; in the middle and southern Rocky Mountain districts and in the west Gulf states they were variable; in the northern slope and northern plateau they were southwesterly; on the California coast they were westerly at all stations, except northwesterly at Cape Mendocino; in the north Pacific coast region they were from south and southwest, except northerly at Roseburg, Oregon.

HIGH WINDS.

[In miles per hour.]

Wind-velocities of fifty or more miles per hour were reported during the month, as follows:

Mount Washington, New Hampshire, 115, nw., 1st; 90, nw., 2d; 64, ne., 4th; 66, nw., 5th; 84, nw., 6th; 72, nw., 7th; 54, nw., 8th; 67, nw., 10th; 90, n., 11th; 82, nw., 12th; 83, nw., 14th; 52, nw., 15th; 60, nw., 16th; 80, nw., 18th; 86, e., 21st; 64, nw., 22d; 80, nw., 23d; 65, nw., 24th; 100, w., 25th; 101, nw., 26th; 75, nw., 27th; 78, sw., 29th; 69, w., 30th; 100, s., 31st.

Pike's Peak, Colorado, 60, nw., 7th; 74, sw., 10th; 70, w., 13th; 76, w., 14th; 54, w., 15th; 56, w., 16th; 68, w., 17th; 56, w., 18th; 52, sw., 19th; 50, n., 20th; 64, w., 24th.

Cape Mendocino, California, 70, se., 8th; 52, se., 16th; 54, nw., 18th; 62, se., 21st; 60, se., 22d; 58, se., 23d; 62, se., 31st.

Fort Buford, Dakota, 52, w., 24th.

Fort Sill, Indian Territory, 52, se., 11th.

Dodge City, Kansas, 52, s., 18th.

Fort Assinaboine, Montana, 54, w., 23d.

Sandy Hook, New Jersey, 60, nw., 1st; 60, nw., 2d; 56, nw., 23d.